CLAIMS

1. A repositionable aperture mask comprising:

an elongated web of flexible film; and

a deposition mask pattern formed in the film, wherein the deposition mask pattern defines deposition apertures that extend through the film that define at least a portion of an integrated circuit.

2. The aperture mask of claim 1, wherein the web of film is formed with a number of deposition mask patterns.

3. The aperture mask of claim 2, wherein each deposition mask pattern is substantially the same.

4. The aperture mask of claim 2, wherein the web of film is formed with two or more different mask patterns.

5. The aperture mask of claim 1, wherein the web of film is sufficiently flexible such that it can be wound to form a roll.

6. The aperture mask of claim 1, wherein the web of film is stretchable such that it can be stretched in at least a down-web direction.

7. The aperture mask of claim 1, wherein the web of film is stretchable in at least a cross-web direction.

8. The aperture mask of claim 1, wherein the web of film comprises a polymeric film.

9. The aperture mask of claim 8, wherein the polymeric film includes polyimide.

10. The aperture mask of claim 1, wherein at least one deposition aperture has a width of less than approximately 1000 microns.

11. The aperture mask of claim 10, wherein at least one deposition aperture has a width of less than approximately 50 microns.

12. The aperture mask of claim 11, wherein at least one deposition aperture has a width of less than approximately 20 microns.

13. The aperture mask of claim 1, wherein the web is at least approximately 100 centimeters in length.

14. The aperture mask of claim 13, wherein the web is at least approximately 10 meters in length.

15. The aperture mask of claim 1, wherein the web is at least approximately 3 cm in width.

16. The aperture mask of claim 1, wherein the web is less than approximately 200 microns in thickness.

17. The aperture mask of claim 1, wherein the web is less than approximately 30 microns in thickness.

18. The aperture mask of claim 1, wherein the flexible film is impregnated with magnetic material.

19. The aperture mask of claim 1, wherein the deposition mask pattern defines one or more circuit elements of a display.

20. The aperture mask of claim 1, wherein the deposition mask pattern defines one or more circuit elements of a radio frequency identification (RFID) circuit.

21. A system comprising:

a first web of flexible film;

a second web of flexible film, wherein the second web of film defines a deposition mask pattern that defines at least a portion of an integrated circuit;

a drive mechanism that moves at least one of the first and second webs relative to the other of the first and second webs; and

a deposition unit that deposits onto the first web of film through the deposition mask pattern defined by the second web of film.

22. The system of claim 21, further comprising an alignment mechanism that aligns the deposition mask pattern of the second web of film with the first web of film prior to deposition.

23. The system of claim 22, wherein the alignment mechanism is a stretching apparatus that stretches the second web of film to align the deposition mask pattern relative to the first web of film.

24. The system of claim 22, wherein the alignment mechanism is a stretching apparatus that stretches the first web of film to align the deposition mask pattern relative to the first web of film.

25. The system of claim 22, wherein the alignment mechanism is a stretching apparatus that stretches both the first and second webs of film to align the deposition mask pattern relative to the first web of film.

26. The system of claim 21, wherein the first and second webs of film are sufficiently flexible such that they can be wound to form rolls.

27. The system of claim 21, wherein the first and second webs of film comprise polymeric films.

28. The system of claim 21, wherein the second web of film is formed with a number of deposition mask patterns.

29. The system of claim 28, wherein each deposition mask pattern is substantially the same.

30. The system of claim 28, wherein at least two deposition mask patterns are substantially different.

31. The system of claim 21, wherein each deposition mask pattern defines deposition apertures, wherein at least one deposition aperture has a width less than 1000 microns.

32. The system of claim 31, wherein at least one deposition aperture has a width less than 50 microns.

33. The system of claim 21, wherein the deposition mask pattern defines one or more circuit layers of a radio frequency identification (RFID) circuit.

34. The system of claim 21, further comprising a controller coupled to the drive mechanism to move the first and second webs of film relative to one another.

35. The system of claim 34, wherein the controller causes movement of first and second webs of film independently of one another.

36. A method comprising:

positioning first and second webs of film in proximity to each other, wherein the second web of film defines a deposition mask pattern; and

depositing material on the first web of film through the deposition mask pattern defined by the second web of film to create at least a portion of an integrated circuit.

37. The method of claim 36, further comprising:

positioning a different area of the first web of film and the deposition mask pattern of the second web of film in proximity to each other; and

depositing material on the different area of the first web of film through the deposition mask pattern.

38. The method of claim 36, further comprising:

positioning a third web of film and the deposition mask pattern of the second web of film in proximity to each other; and

depositing material on the third web of film through the deposition mask pattern defined by the second web of film to create at least a portion of an integrated circuit on the third web of film.

39. The method of claim 36, further comprising:

positioning the first web of film and a third web of film in proximity to each other, wherein the third web of film is formed with another deposition mask pattern; and

depositing another material on the first web of film through the deposition mask pattern on the third web of film to create another portion of the integrated circuit on the first web of film.

40. The method of claim 36, further comprising:

positioning the first web of film and each of a number of webs of film formed with deposition mask patterns in proximity to one another; and

sequentially depositing materials on the first web of film through the deposition mask patterns to create the integrated circuit on the first web of film.

41. The method of claim 40, further comprising creating a number of integrated circuits on the first web of film.

42. The method of claim 41, further comprising separating the number of integrated circuits.

43. The method of claim 42, wherein the integrated circuits comprise radio frequency identification (RFID) circuits.

44. The method of claim 36, further comprising:

stretching the second web of film in a down-web direction to align the deposition mask pattern relative to the first web of film prior to deposition.

45. The method of claim 36, further comprising:

stretching the second web of film in a cross-web direction to align the deposition mask pattern relative to the first web of film prior to deposition.

46. The method of claim 36, further comprising:

stretching the first web of film in a down-web direction to align the deposition mask pattern relative to the first web of film prior to deposition.

47. The method of claim 36, further comprising:

stretching the first web of film in a cross-web direction to align the deposition mask pattern relative to the first web of film prior to deposition.

48. The method of claim 36, further comprising:

stretching both the first web of film and the second web of film in down-web directions respectively to align the deposition mask pattern relative to the first web of film prior to deposition.

49. A method of creating integrated circuits comprising:

passing a first elongated web of flexible film through a number of vacuum deposition chambers; and

sequentially depositing patterned layers of material on the web of flexible film in each vacuum deposition chamber.

50. The method of claim 49, wherein deposition of a layer corresponding to a second layer in a second vacuum deposition chamber occurs at substantially the same time as deposition of a layer corresponding to a first layer in a first vacuum deposition chamber.

51. The method of claim 49, further comprising separating the first elongated web of flexible film into a number of integrated circuits.

52. The method of claim 51, wherein each circuit comprises a radio frequency identification (RFID) circuit.

53. A system comprising:

a first web of film;

a second web of film, wherein the second web of film is formed with a number of deposition mask patterns;

a third web of film, wherein the third web of film is formed with a number of deposition mask patterns;

a first deposition chamber, wherein the first and second webs of film feed past one another inside the first deposition chamber such that material can be deposited onto the first web of film through a deposition mask pattern of the second web of film; and

a second deposition chamber, wherein the first and third webs of film feed past one another inside the second deposition chamber such that material can be deposited onto the first web of film through a deposition mask pattern of the third web of film.

54. A stretching apparatus for aligning a deposition mask pattern with a substrate, wherein the deposition mask pattern is formed in a first web of film, the apparatus comprising:

a first stretching mechanism to stretch the first web of film to align the deposition mask pattern formed in the first web of film with the substrate.

55. The stretching apparatus of claim 54, further comprising one or more sensors to sense whether the deposition mask pattern is aligned with the substrate.

56. The stretching apparatus of claim 54, further comprising one or more controllers to align the deposition mask pattern with the substrate.

57. The stretching apparatus of claim 54, wherein the substrate forms part of a second web of film, the apparatus further comprising:

a second stretching mechanism to stretch the second web of film to align the deposition mask pattern formed in the first web of film relative to the substrate.

58. A system comprising:

a first web of film;

a second web of film, wherein the second web of film is formed with a number of deposition mask patterns;

a first stretching mechanism to stretch the first web of film in a down-web direction;

a second stretching mechanism to stretch the second web of film in a down-web direction, wherein the down-web direction of the second web of film is different from the down-web direction of the first web of film, wherein stretching the first and second webs of film aligns a deposition mask pattern of the second web of film with the first web of film for a deposition process; and

a deposition unit to deposit material through the deposition mask patterns onto the first web of film.

59. The system of claim 58, wherein at least one of the stretching mechanisms stretches at least one of the webs in a cross-web direction.

60. A system comprising:

a first web of film;

a second web of film, wherein the second web of film is formed with a number of deposition mask patterns;

a first stretching mechanism to stretch the first web of film in a cross-web direction;

a second stretching mechanism to stretch the second web of film in a cross-web direction, wherein the cross-web direction of the second web of film is different from the cross-web direction of the first web of film, wherein stretching the first and second webs of film aligns a deposition mask pattern of the second web of film with the first web of film for a deposition process; and

a deposition unit to deposit material through the deposition mask patterns onto the first web of film.